

METHOD OF FORMING FREESTANDING SEMICONDUCTOR LAYER

Abstract

A method of providing a freestanding semiconductor layer on a conventional SOI or bulk-substrate silicon device includes forming an amorphous or polycrystalline mandrel on a monocrystalline base structure. A conformal polycrystalline semiconductor layer is then formed on the mandrel and on the base structure, wherein the polycrystalline layer contacts the base structure. The polycrystalline semiconductor layer is then recrystallized so that it has a crystallinity substantially similar to that of the base structure. Thus, a freestanding semiconductor layer is formed with a high degree of control of the thickness and height thereof and maintaining a uniformity of thickness.